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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/765,516	01/18/2001	Keith M. Chugg	06666/060001/USC-2990	9524
20985	7590	06/02/2005	EXAMINER	
FISH & RICHARDSON, PC 12390 EL CAMINO REAL SAN DIEGO, CA 92130-2081				PERILLA, JASON M
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/765,516	CHUGG ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Jason M. Perilla	2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### **Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 27 December 2004.

2a)  This action is FINAL.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-17 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-17 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 27 December 2004 is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/14/05.

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_.

### **DETAILED ACTION**

1. Claims 1-17 are pending in the instant application.

#### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on January 14, 2005 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

#### ***Drawings***

3. The replacement drawings were received on December 27, 2004. These drawings are accepted by the Examiner.

#### ***Response to Arguments/Amendments***

4. Applicant's arguments, see page 8, filed December 27, 2004, with respect to the prior art rejections applied to claims 1-16 in the first office action dated June 21, 2004 have been fully considered and are persuasive. The prior art rejections of the first office action applied to claims 1-16 have been withdrawn.

5. The prior art rejection of the first office action applied to claim 17 has been withdrawn in view of the amendments to the claims filed December 27, 2004.

6. New objections and rejections are set forth below.

#### ***Claim Objections***

7. Claims 1-17 are objected to because of the following informalities:

Regarding claim 1, in line 25, "the transmission system" should be replaced by – the digital transmission system" and "updated first and second sequences of soft

information" is lacking definite antecedent basis, and, in line 22, "backward estimates" should be replaced by –backward channel parameter estimates--.

Regarding claim 5, in lines 2-3, "the inputs and outputs defined by Trellis state transition" is lacking antecedent basis.

Regarding claim 6, in lines 1-2, "said soft output" is lacking antecedent basis.

Regarding claims 11-13, in line 3 of each claim, "each Trellis state" is lacking antecedent basis.

Regarding claim 16, in line 15, "backward estimates" should be replaced by –backward channel parameter estimates--, and, in line 17, "the transmission system" should be replaced by –the digital transmission system--.

Regarding claim 17, in line 6, "updated soft information" is lacking antecedent basis, in line 21, "backward estimates" should be replaced by –backward channel parameter estimates--, and, in line 31, "said coded symbols" should be replaced by –said plurality of coded signals--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the claim is rejected for failing to distinctly claim the subject matter of the invention as described in the specification and for being incomplete for omitting essential structural cooperative relationships of elements, such as an omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. As claimed, the receiver front end, and the forward and backward recursion elements both receive an observed digital signal. However, the invention as disclosed in the specification receives an observed digital signal at the receiver front end and subsequently passes a received observed digital signal to the remaining elements of the system. Therefore, the claim is rejected because it fails to distinctly claim the appropriate structural relationships of the system. Further, in lines 11 and 19, "channel parameters" are estimated. However, one is unable to definitively determine if the "channel parameters" are the same in both instances or exclusive of one another. The claim is therefore indefinite because one skilled in the art is unable to determine if a single set of "channel parameters" is determined by both the first and second sequences of soft information or if the first and second sequences of soft information are used to determine respectively a first and a second set of channel parameters by the forward and backward channel estimators, respectively.

Regarding claims 2-15, the claims are rejected as being based upon a rejected parent claim.

Regarding claim 16, the claim is rejected for the same reasons as applied to claim 1 above.

Regarding claim 17, the claim is rejected for the same reasons as applied to claim 1 above with respect to the "channel parameters" in lines 12 and 17.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Perilla whose telephone number is (571) 272-3055. The examiner can normally be reached on M-F 8-5 EST.

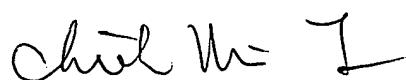
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jason M. Perilla  
May 31, 2005

jmp



CHIEH M. FAN  
PRIMARY EXAMINER